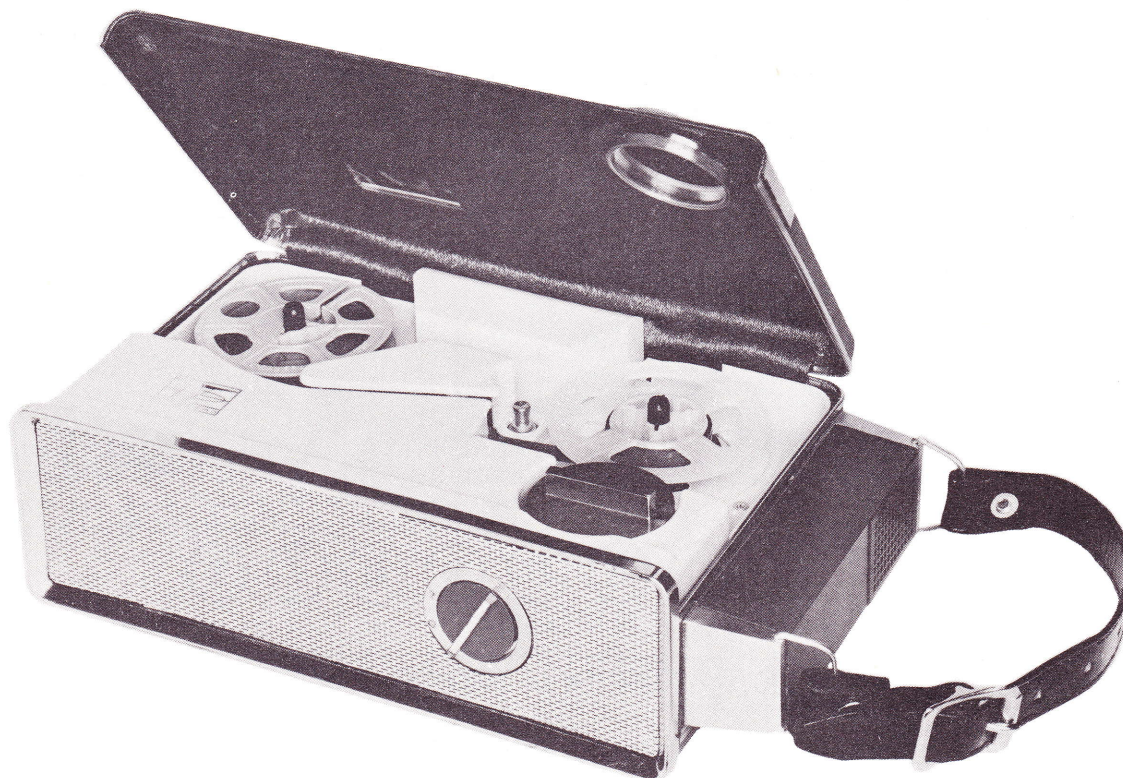
TELECTRO
MODEL MR511TELECTRO
MODEL MR511

GENERAL INFORMATION

The Telectro Model MR511 is a battery-operated, two-speed, tape recorder. This unit is designed to record and play back two tracks of material on standard width tape. The tape speeds are $1\frac{7}{8}$ and $3\frac{3}{4}$ ips.

Recordings can be made from radio, phono, AM-FM tuner, or TV receiver, as well as a microphone. Using both tracks of a 3-inch reel of tape, the recording times are as follows:

| | | |
|-----------|--------------------|---------------------|
| Reel Size | $1\frac{7}{8}$ ips | $3\frac{3}{4}$ ips |
| 3" | 1 hour | $1\frac{1}{2}$ hour |

The power supply is self-contained, consisting of seven $1\frac{1}{2}$ volt penlite batteries.

Manufactured By:

Telectrosonic Corporation
35-18 37th Street,
Long Island City 1, New York

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of CQ497



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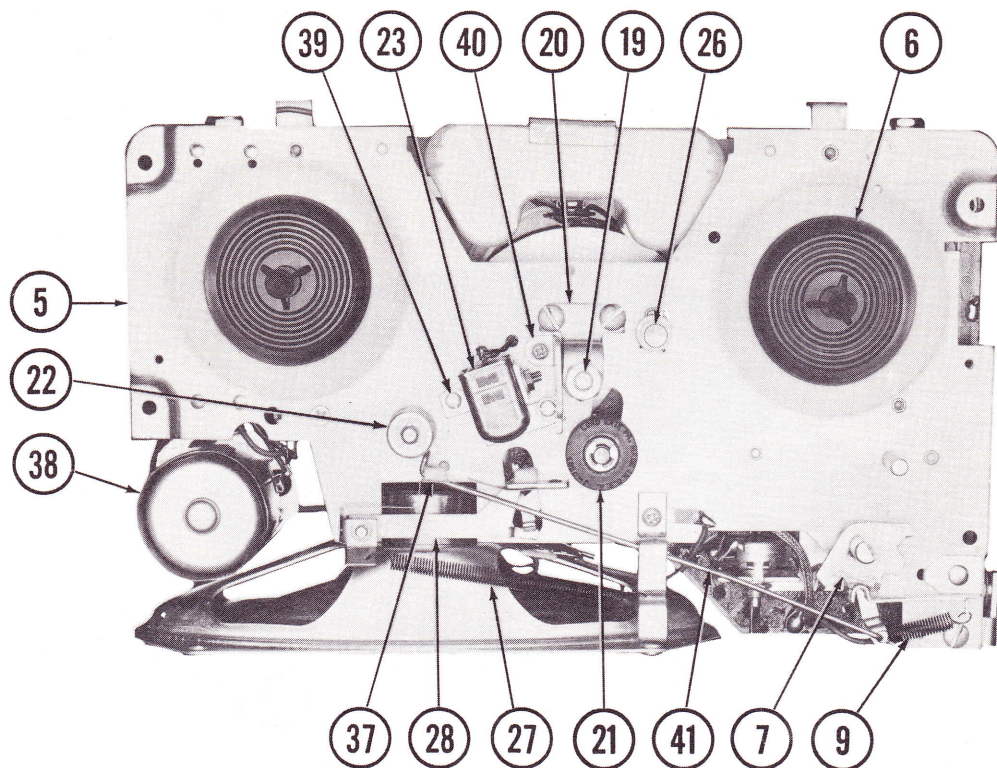


FIG.1 TOP VIEW OF MECHANISM

PREPARING FOR OPERATION

Open the lid and thread the tape (See "Threading the Tape"). When the Function control is turned to Rewind, Play, or Record position, power is automatically applied to the recorder.

FUNCTION OF CONTROLS

Function Control

The Function control is a four-position control. The Rewind position winds the tape from the take-up reel to the supply reel at a fast rate. The Off position releases the pressure roller and pressure pads and removes the power from the amplifier and motor. The Play position applies the pressure pads to the head, applies power to the amplifier and motor, and sets the tape in motion. Record position sets the recorder up for recording. The Record lock button must be depressed at the same time the Function control is rotated to the Record position.

Volume Control

The Volume control determines the volume of the recorder during playback and also the recording level when making a recording.

Speed Change Control

When recording or playing back a tape at $3 \frac{3}{4}$ ips, pull the Speed Selector control to the "up" position. With the Speed Selector control in the "down" position, the tape travels at $1 \frac{7}{8}$ ips.

NOTE: Change the Speed Selector control with the Function control in the Stop position only.

Threading the Tape

1. Place a reel of tape on the left (supply) spindle and an empty reel on the right (take-up) spindle.
2. Unwind about 8 inches of tape and thread it through the tape slot, making sure the shiny side of the tape faces the front of the recorder.
3. Insert the free end of the tape into one of the slots in the hub of the take-up reel. Turn the take-up reel counterclockwise to take up the slack in the tape.

To Record from a Microphone

Insert the microphone jack into the microphone input. Thread the tape as described under "Threading the Tape". Push the Record lock button and turn the Function Selector to the Record Position. Set the Volume control between 2 and 3. Hold the microphone

6 to 8 inches away from your mouth. If the recording is distorted, decrease the volume setting during recording. If the recording is weak, increase the volume setting.

To Rewind the Tape

To rewind the tape, move the Function selector to the Rewind position. To stop the tape, return the Function selector to the Off position.

To Play a Recording

1. Follow instructions under "Threading the Tape".
2. Move the Function selector to the Play position.
3. Adjust the Volume control to the desired listening level.
4. To stop the tape transport, move the Function selector to the Off position.

Erasing Recorded Material

Any recording on a tape is automatically erased before a new recording is put on the tape when the unit is in Record position. To erase a tape without putting a new recording on it, follow the normal recording procedure but leave the Volume control setting at minimum.

Dual Track Recording

These recorders are designed to record and play back on one-half the tape width at a time. After the recording is completed, and all the tape is wound on the take-up reel, remove the reels from the recorder. Turn the reels over and place full reel on the supply spindle. Properly thread the tape and proceed with recording. After the second track has been recorded, the first track can be played back in the same manner.

To Edit and Splice Tape

NOTE: Since one track cannot be edited and spliced without affecting the other track, recordings to be edited should be limited to one track only.

1. Tape may be edited by cutting out unwanted portions of the tape or by joining selections into another sequence. Announcements may be inserted between selections, etc. Unused sections can be spliced for re-use.
2. For best results, cut tape at a slight diagonal, join ends with splicing tape on the glossy side. Trim off any excess width.

DISASSEMBLY

To Remove the Recorder from the Case

1. Remove the Function control knob (1) and the Volume control knob.
2. Remove the rear escutcheon by pressing in on the front and lifting upward.
3. Remove 3 screws and lift the front escutcheon up off the recorder.
4. Lift the recorder from the case.
5. To reassemble, reverse the above procedure.

CLEANING

Pressure roller (21), Capstan shaft (11), Tape guide (41), and Record-Playback head (23) may accumulate tape oxide coating, worn off the tape as it passes

these parts. This accumulation will cause poor performance and should be removed with a soft lint-free cloth dipped in alcohol.

LUBRICATION

Under normal use, this recorder needs no lubrication. When unit is disassembled, clean and lubricate all bearing surfaces with a good grade of oil.

Lubricate the cams and levers with a non-hardening grease. Make sure no oil or grease gets on the rubber surface of the drive wheels.

ADJUSTMENT

Record-Playback Head

The Record-Playback head (23) has been properly aligned at the factory, and should not need adjustment unless it is replaced. The top edge of the Record-Playback head (23) must be set evenly with the top edge of the tape. Loosen nuts and adjust the height. Using an alignment tape, adjust head adjustment screw (40) until highest frequency response is obtained.

Flywheel Bearing Adjustment

To adjust flywheel, loosen nut and adjust adjust-

ment screw (19) until a slight resistance is felt; back off screw 1/4 turn and tighten nut.

NOTE: Care must be taken when turning flywheel adjusting screw (19) to prevent damage to flywheel bearing.

Brake Adjustment

To adjust brake (35) loosen screws and adjust brake arm until proper brake action is obtained. Braking should be smooth and immediate.

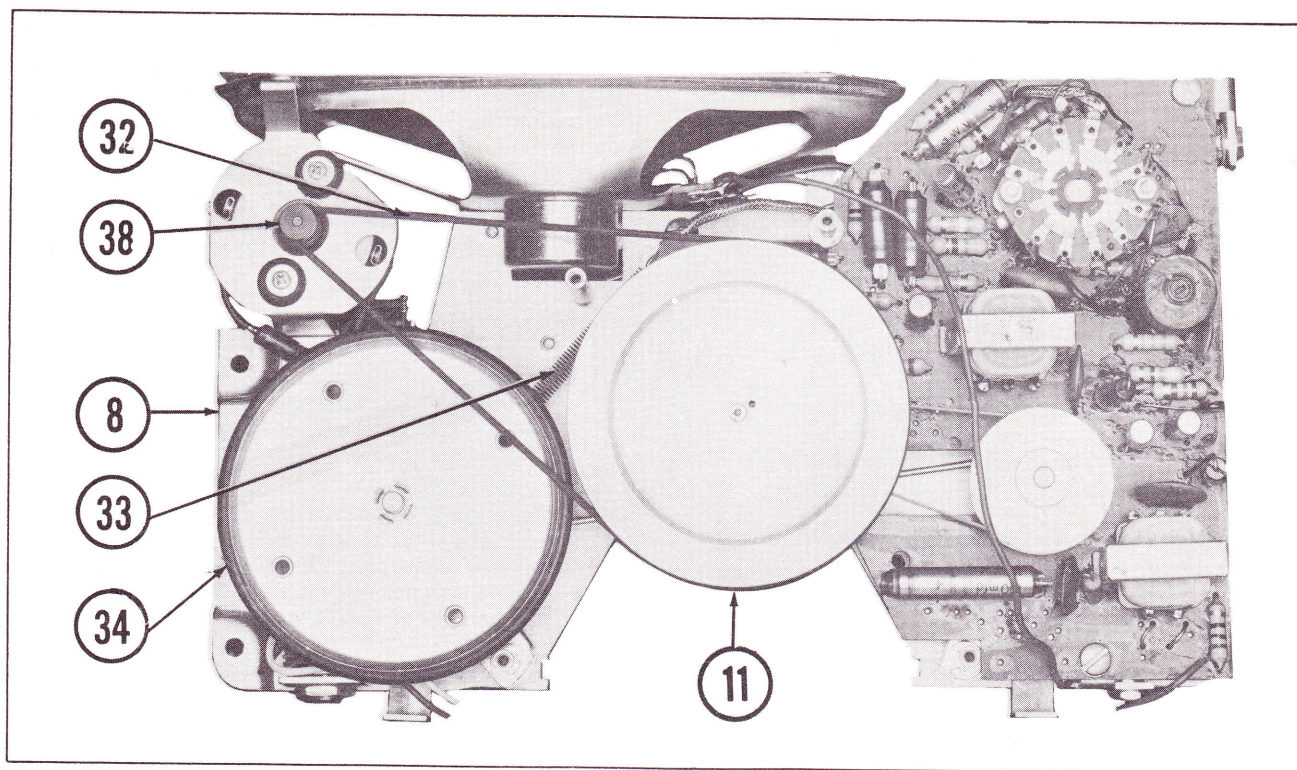


FIG.2 BOTTOM VIEW OF MECHANISM

TRUBLE CHART

NOTE: Before attempting any troubleshooting on this unit, check the batteries and re-

place them if they are weak. Weak batteries can cause many and varied troubles.

| Symptom | Cause | Remedy |
|--|---|---|
| Recordings distorted. | <ol style="list-style-type: none"> 1. Record-Playback head pressure pad (37) worn or dirty. 2. Record-Playback switch return spring (9) weak. | <ol style="list-style-type: none"> 1. Replace pressure pad (37), or clean with soft cloth and alcohol. 2. Replace spring (9). |
| Wow. | <ol style="list-style-type: none"> 1. Oil on pressure roller (21), capstan (11), or motor pulley. 2. Pressure roller (21) out of round. 3. Flywheel bearing (19) loose or damaged. 4. Pressure roller plate (17) out of line. 5. Take-up reel rubbing against speed selector. Play cam lever bent. | <ol style="list-style-type: none"> 1. Clean these parts with a soft cloth and alcohol. 2. Replace pressure roller (21). 3. See "Flywheel Bearing Adjustment". Replace if necessary. 4. Replace pressure roller plate (17). 5. Bend Play cam lever until reel does not rub. |
| No Rewind. | <ol style="list-style-type: none"> 1. Drive belt (32) loose or broken. 2. Take-up belt (12) loose or broken. 3. Oil or grease on driving surface. | <ol style="list-style-type: none"> 1. Replace drive belt (32). 2. Replace take-up belt (12). 3. Clean all driving surfaces with a soft cloth and alcohol. |
| Reels do not turn in Record or Playback. | <ol style="list-style-type: none"> 1. Defective motor. 2. Pressure roller plate spring (33) loose or broken. 3. Pressure pad bracket spring (27) loose or broken. | <ol style="list-style-type: none"> 1. Replace motor (38). 2. Replace pressure roller plate spring (33). 3. Replace pressure pad bracket spring (27). |
| Does not Record or Erase. | <ol style="list-style-type: none"> 1. Record interlock spring (3) bent. | <ol style="list-style-type: none"> 1. Replace or straighten Record interlock spring (3). |
| Will not Erase. | <ol style="list-style-type: none"> 1. Erase head link (41) loose or bent. 2. Erase head pressure pad (28) bracket bent. | <ol style="list-style-type: none"> 1. Straighten or replace link. 2. Straighten or replace erase head pressure pad bracket (28). |

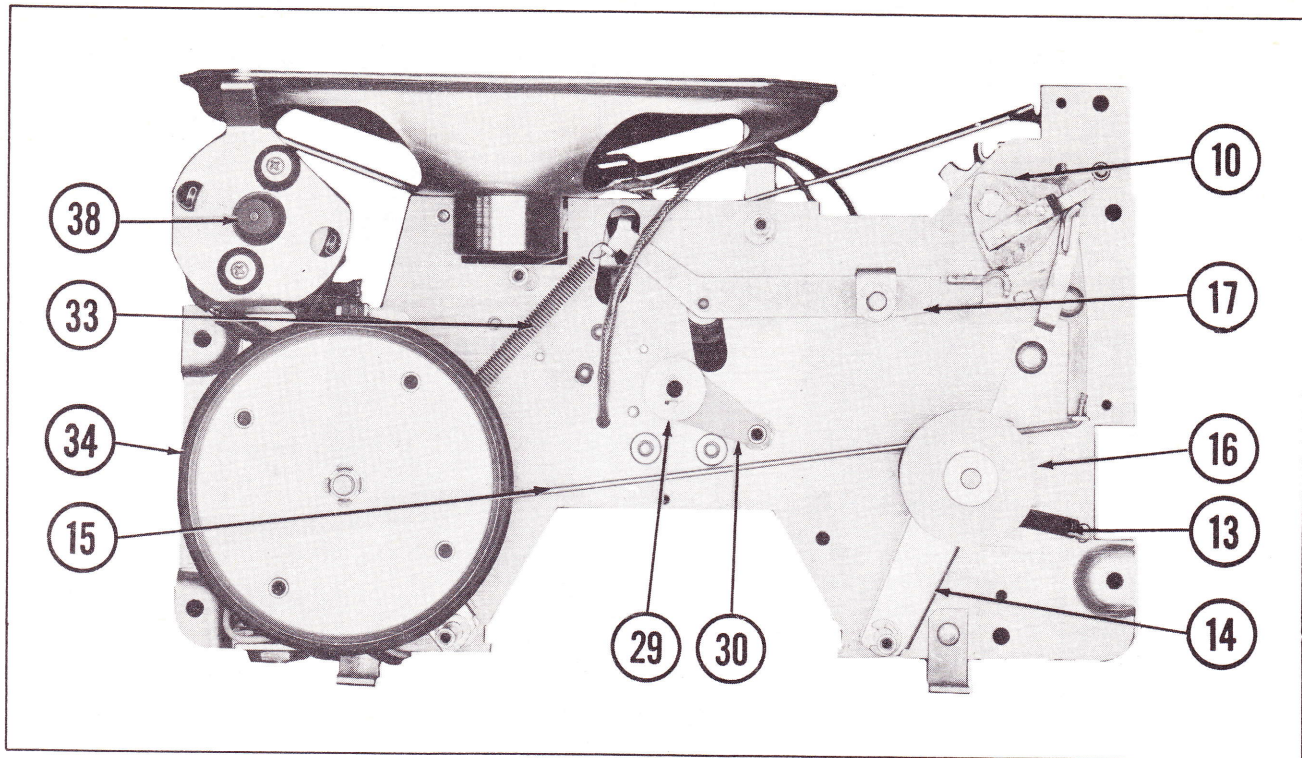


FIG.3 BOTTOM VIEW OF MECHANISM

TROUBLE CHART (CON'T.)

| Symptom | Cause | Remedy |
|--|--|--|
| Speed selector knob will not remain in position. | 1. Speed selector spring broken or missing. | 1. Replace speed selector spring. |
| Transport noisy when operating at 1 7/8 ips. | 1. Speed selector shaft ass'y. (30) hitting flywheel (11). | 1. Raise speed selector shaft ass'y. (30) by unscrewing selector knob (26) and placing washers between shaft and knob. |

MECHANICAL PARTS LIST

| Ref. No. | Part No. | Description | Ref. No. | Part No. | Description |
|----------|-----------|------------------------------|----------|----------|--------------------------------|
| 1 | TK-278 | Function Control Knob | 22 | 120011 | Erase Head Ass'y. |
| 2 | 480009 | Record Lock Button | 23 | TH-661 | Record-Playback Head |
| 3 | 960014 | Record Lock Spring | 24 | TB-2028 | Record-Playback Head Mtg.Brkt. |
| 4 | 100002 | Rear Escutcheon | 25 | 960001 | Speaker Bracket and Rod Guide |
| 5 | 100003 | Front Escutcheon | 26 | 480008 | Speed Selector Knob |
| 6 | TS-3222 | Reel Spindle | 27 | 879004 | Lever-Pressure Pad Spring |
| 7 | TC-2362 | Star Indexing Cam | 28 | 120006 | Pressure Pad Bracket Ass'y. |
| 8 | 120003 | Motor Board Ass'y. | 29 | TA-1700 | Capstan and Pin Sleeve Ass'y. |
| 9 | 879002 | Record Switch Return Spring | 30 | 120013 | Speed Selector Shaft Ass'y. |
| 10 | 120002 | Function Cam Shaft Ass'y. | 31 | TG-512 | Grommet |
| 11 | TA-1593 | Flywheel Ass'y. | 32* | TO-243 * | *Drive Belt |
| 12 * | 290001 * | * Take-up Belt | 33 | 879004 | Pressure Roller Plate Spring |
| 13 | 879003 | Wind Arm Spring | 34 | 120012 | Rewind Wheel Ass'y. |
| 14 | 960008 | Wind Arm | 35 | 960007 | Brake Arm |
| 15 | 360001 | Rewind Link | 36 | TP-1423 | Brake Arm Pad |
| 16 | TW-487 | Take-up Wheel | 37 | TP-863 | Pressure Pad |
| 17 | 120005 | Pressure Roller Plate Ass'y. | 38 | 120009 | Motor Ass'y. |
| 18 | 120007 | Bottom Support Plate Ass'y. | 39 | | Screw |
| 19 | TB-2576 | Adjustable Jewel Bearing | 40 | TC-515 | Tape Guide |
| 20 | TH-645-2 | Bearing Housing | 41 | TL-447 | Erase Head Link |
| 21* | TR-2136 * | *Pressure Roller | | | |

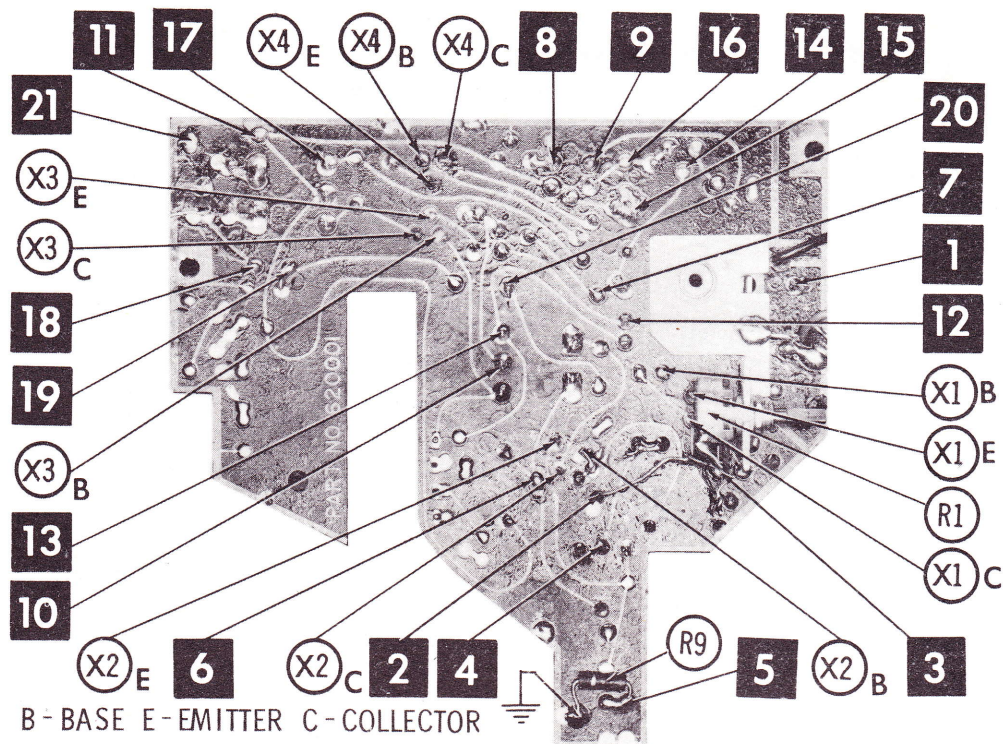
* Drive Belt-WALSCO Part No. 41-094

* Pressure Roller -WALSCO Part No. 41-104

* Take-up Belt - WALSCO Part No. 41-100

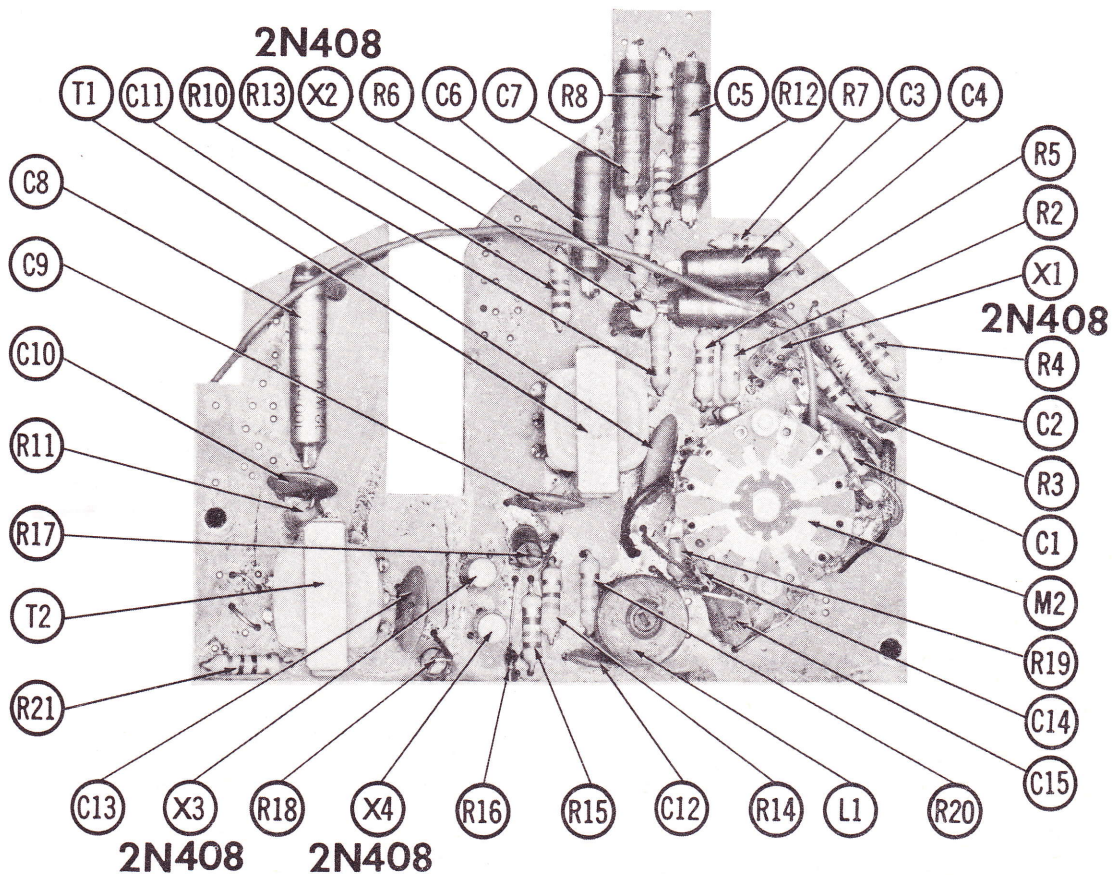
TELECTRO
MODEL MR511

FOLDER 15

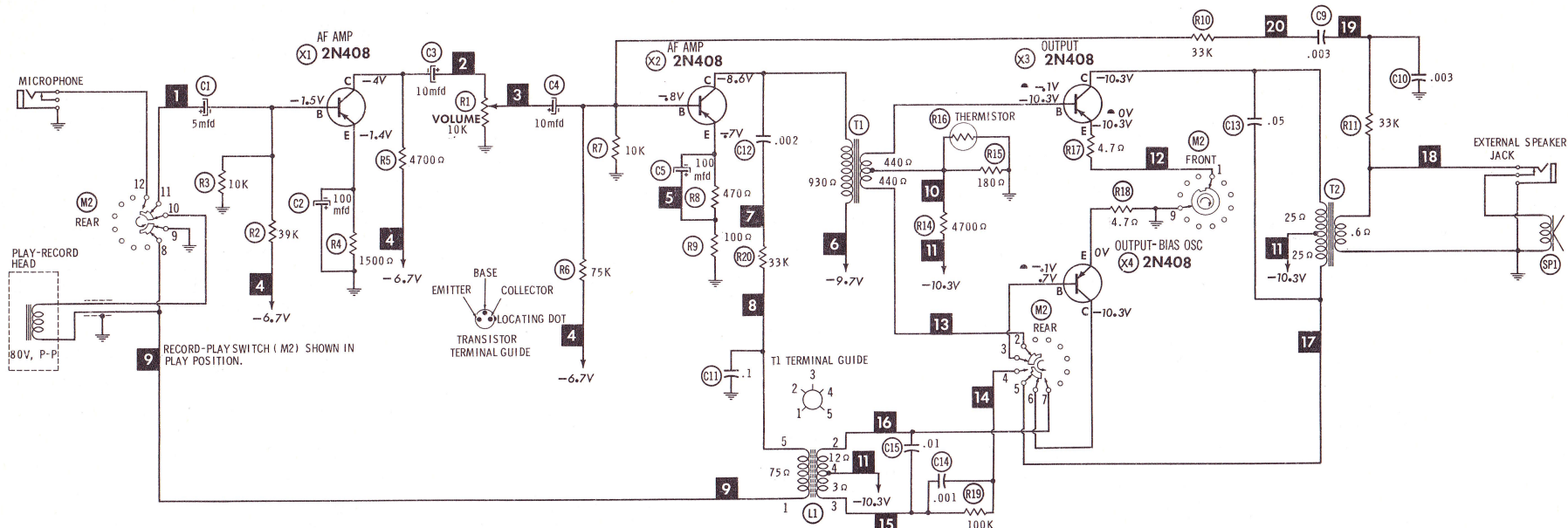


A Howard W. Sams CIRCUITRACE[®] Photo

PRINTED BOARD



PRINTED BOARD-TOP VIEW



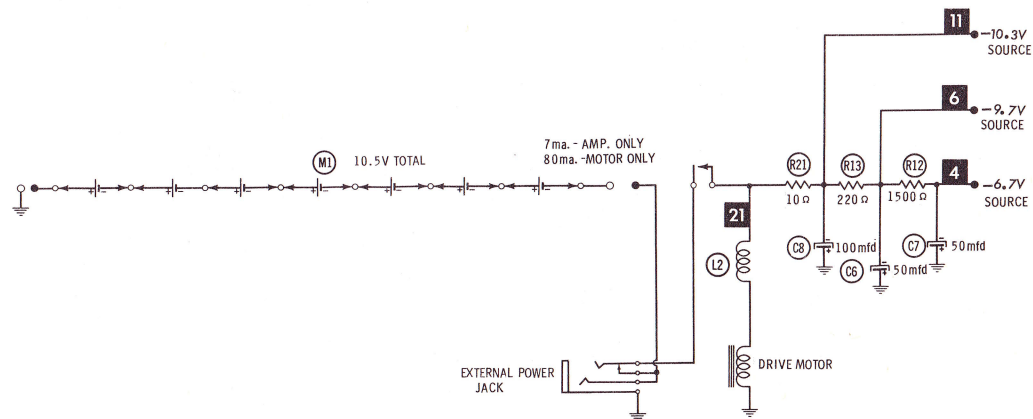
NUMBERS ASSIGNED TO COILS, SWITCHES, PLUGS, SOCKETS, AND TRANSFORMERS ARE TO FACILITATE CIRCUIT TRACING OR COMPONENT REPLACEMENT AND MAY NOT NECESSARILY BE FOUND ON THE UNIT.

▲ MEASURED IN "RECORD" POSITION

RESISTANCE MEASUREMENTS NOT GIVEN BECAUSE OF THE WIDE VARIATION IN INTERNAL TRANSISTOR RESISTANCE.

1. DC voltage measurements taken with vacuum tube voltmeter.
2. Socket connections or transistor terminals are shown as bottom views.
3. Measured values are from socket pin or terminal to common ground.
4. Nominal tolerance on component values makes possible a variation of $\pm 15\%$ in voltage and resistance readings.
5. Volume control at maximum, no signal applied for voltage measurements.

A PHOTOFACIT STANDARD NOTATION SCHEMATIC
with **CIRCUITRACE**
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TELECRO
MODEL MR511

TELECRO
MODEL MR511

FOLDER 15

ELECT. PARTS LIST AND DESCRIPTIONS

TRANSISTORS

| ITEM No. | ORIG. TYPE | USE | REPLACEMENT DATA | | NOTES |
|----------|------------|------------------|------------------|-------------------|-------|
| | | | RCA PART No. | RAYTHEON PART No. | |
| X1 | 2N408 | AF Amplifier | 2N408 | 2N633 | PNP |
| X2 | 2N408 | AF Amplifier | 2N408 | 2N633 | PNP |
| X3 | 2N408 | Output | 2N408 | 2N633 | PNP |
| X4 | 2N408 | Output-Bias Osc. | 2N408 | 2N633 | PNP |

ELECTROLYTIC CAPACITORS

| ITEM No. | RATING | | REPLACEMENT DATA | | | | | | |
|----------|--------|-------|-------------------|------------------|---------------------------|---------------------------|------------------|------------------|------------------|
| | CAP. | VOLT. | TELECTRO PART No. | AEROVOX PART No. | CORNELL-DUBILIER PART No. | GENERAL ELECTRIC PART No. | MALLORY PART No. | PYRAMID PART No. | SPRAGUE PART No. |
| C1 | 5 | 12 | TC-2434 | PTT51 | NLW5-15 | MT1-3 | TT12X5 | MLV5-12 | TE-1127 |
| C2 | 100 | 3 | TC-2435 | PTT13 | NLW100-3 | MT1-18 | TT6X100 | MLV100-3 | TE-1059, 5 |
| C3 | 10 | 12 | TC-2436 | PTT53 | NLW10-15 | MT1-5 | TT12X10 | MLV10-12 | TE-1128 |
| C4 | 10 | 12 | TC-2436 | PTT53 | NLW10-15 | MT1-5 | TT12X10 | MLV10-12 | TE-1128 |
| C5 | 100 | 3 | TC-2438 | PTT13 | NLW100-3 | MT1-18 | TT6X100 | MLV100-3 | TE-1059, 5 |
| C6 | 50 | 12 | TC-2437 | PTT59 | NLW50-15 | MT1-16 | TT15X50 | MLV50-12 | TE-1133 |
| C7 | 50 | 12 | TC-2437 | PTT59 | NLW50-15 | MT1-16 | TT15X50 | MLV50-12 | TE-1133 |
| C8 | 100 | 12 | TC-2439 | PTT60 | NLW100-12 | MT1-19 | TT15X100 | MLV100-12 | TE-1135 |

FIXED CAPACITORS

| ITEM No. | RATING | REMARKS | REPLACEMENT DATA | | | | | |
|----------|--------|---------|------------------|--------------------|---------------------------|------------------|------------------|------------------|
| | | | AEROVOX PART No. | CENTRALAB PART No. | CORNELL-DUBILIER PART No. | ELMENCO PART No. | MALLORY PART No. | SPRAGUE PART No. |
| C9 | .003 | | DI-3000 | DD-302 | BYA10D3 | CCD-302 | GP230 | 10TS-D30 |
| C10 | .003 | | DI-3000 | DD-302 | BYA10D3 | CCD-302 | GP230 | 10TS-D30 |
| C11 | .1 50V | | | DDA-104 | H-05P1 | | TA-010 | TG-P10 |
| C12 | .002 | | BPD-002 | DD-202 | BYA10D2 | CCD-202 | B-220 | 5HK-D20 |
| C13 | .05 | | BPD-05 | DD-503 | H-05S5 | | TA-150 | 5HK-S50 |
| C14 | .001 | | BPD-001 | DD-102 | BYA10D1 | CCD-102 | B-210 | 5HK-D10 |
| C15 | .01 | | BPD-01 | DD-103 | BYA10S1 | CCD-103 | B-110 | 5HK-S10 |

CONTROLS

All wattages 1/2 watt, or less, unless otherwise listed.

| ITEM No. | USE | RESISTANCE | REPLACEMENT DATA | | | | |
|----------|--------|------------|-------------------|--------------------|--------------------|------------------|------------------|
| | | | TELECTRO PART No. | CENTRALAB PART No. | CLAROSTAT PART No. | CTS-IRC PART No. | MALLORY PART No. |
| R1 | Volume | 10K | TP-1483 | JP2-103 | 4410K-W | | MLC14A |

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

| ITEM No. | RATING | REPLACEMENT DATA | | | ITEM No. | RATING | REPLACEMENT DATA | | |
|----------|--------|------------------|---------------------|---------|----------|------------|------------------|---------------------|-------------|
| | | IRC PART No. | WORKMAN TV PART No. | REMARKS | | | IRC PART No. | WORKMAN TV PART No. | REMARKS |
| R2 | 39K | | | | R12 | 1500Ω | | | |
| R3 | 10K | | | | R13 | 220Ω | | | |
| R4 | 1500Ω | | | | R14 | 4700Ω | | | |
| R5 | 4700Ω | | | | R15 | 180Ω | | | |
| R6 | 75K | | | | R16 | Thermistor | | | Pt. #TT-814 |
| R7 | 10K | | | | R17 | 4.7Ω | | | |
| R8 | 470Ω | | | | R18 | 4.7Ω | | | |
| R9 | 100Ω | | | | R19 | 100K | | | |
| R10 | 33K | | | | R20 | 33K | | | |
| R11 | 33K | | | | R21 | 10Ω | | | |

COILS (RF-IF)

| ITEM No. | USE | REPLACEMENT DATA | | | | | NOTES |
|----------|-----------------|-------------------|----------------|-----------------|------------------|---------------------|-------|
| | | TELECTRO PART No. | Merit PART No. | Miller PART No. | Stancor PART No. | Workman TV PART No. | |
| L1 | Osc. | TT-917 | | | | | |
| L2 | RF Choke(1.4uh) | | BC-562 | 4604 | RTC-8516 | T856 | |

TRANSFORMER (DRIVER)

| ITEM No. | TURNS RATIO | | REPLACEMENT DATA | | | | | NOTES |
|----------|-------------|------|-------------------|----------------|------------------|---------------------|----------------|-------|
| | PRI. | SEC. | TELECTRO PART No. | Merit PART No. | Stancor PART No. | Thordarson PART No. | Triad PART No. | |
| T1 | 1.8 | 1 | TT-927 | | | | | |

TRANSFORMER (AUDIO OUTPUT)

| ITEM No. | IMPEDANCE | | REPLACEMENT DATA | | | | | NOTES |
|----------|-----------|------|-------------------|----------------|------------------|---------------------|----------------|-------|
| | PRI. | SEC. | TELECTRO PART No. | Merit PART No. | Stancor PART No. | Thordarson PART No. | Triad PART No. | |
| T2 | 1000Ω CT | 3-4Ω | TT-925 | | | | | |

SPEAKER

| ITEM No. | TYPE | | | REPLACEMENT DATA | | NOTES |
|----------|-----------------|-------|------------|-------------------|---------------|-------|
| | SIZE | FIELD | V. C. IMP. | TELECTRO PART No. | QUAM PART No. | |
| SP1 | 2 1/4" x 6 1/4" | PM | 3-4Ω | TS-3503 | | |

BATTERIES

| ITEM No. | VOLTAGE | TELECTRO PART No. | REPLACEMENT DATA | | | | NOTES |
|----------|---------|-------------------|------------------|-------------|--------------|--------------|---------------------|
| | | | BURGESS "A" | BURGESS "B" | EVEREADY "A" | EVEREADY "B" | |
| M1 | 1 1/2V | | | 930 | | 1015 | M-15R 7 Required |

MISCELLANEOUS

| ITEM No. | PART NAME | TELECTRO PART No. | NOTES |
|----------|-----------|-------------------|----------------------------------|
| M2 | Switch | TS-3223 | Function Selector (Rotary Wafer) |

CABINETS & CABINET PARTS

(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

| NAME | PART NO. | DESCRIPTION |
|---------|-----------|-----------------------|
| Knob | 480008-26 | Speed |
| Knob | TK-279 | Volume |
| Knob | TK-278-1 | Function |
| Button | 480009-2 | Part of Function Knob |
| Handle | TH-644 | Leather |
| Cabinet | 1220010 | |

WIRING DATA

General-use Unshielded Hook-up Wire Use BELDEN No. 8530 (Solid) Available in Ten Colors
 8524 (Stranded) Available in Ten Colors
 Power Cord Use BELDEN No. 1765-B (6 Ft. Length)
 1725-K (7 1/2 Ft. Length)
 Low-Loss Shielded Lead (Interconnecting) Use BELDEN No. 8401
 Phono Pick-up Arm Cable Use BELDEN No. 8430 (Two Conductor - Twisted)